

REMARKS

Status of the claims:

With the above amendments, claim 5 has been canceled and claims 1 and 20 have been amended. Thus, claims 1-4 and 6-20 are pending and ready for further action on the merits. No new matter has been added by way of the above amendments. Claims 1 and 20 have been amended by adding the elements of claim 5. Reconsideration is respectfully requested in light of the following remarks.

Rejections under 35 USC §103

Claims 1-2, 9, and 20 are rejected under 35 USC §103(a) as being unpatentable over Beutel '743 (US Patent No. 5,145,743).

Claims 1-3, 5-7, 9-10, 12-13 and 20 are rejected under 35 USC §103(a) as being unpatentable over Weiss '550 (US Patent No. 4,028,550) in view of Leblans '578 (US Patent No. 5,360,578).

Claim 4 is rejected under 35 USC §103(a) as being unpatentable over Weiss '550 in view of Leblans '578 and further in view of Jamil '916 (US Patent No. 5,772,916).

Claim 8 is rejected under 35 USC §103(a) as being unpatentable over Weiss '550 in view of Leblans '578 and further in view of Ochiai '971 (US Patent No. 4,501,971).

Claim 11 is rejected under 35 USC §103(a) as being unpatentable over Weiss '550 in view of Leblans '578 and further in view of Hultsch '454 (US Patent No. 4,405,454).

These rejections are traversed for the following reasons.

Claim 1 has been amended by the incorporation of the subject matter of claim 5. Because claims 2-4 and 6-13 are dependent from claim 1 (either directly or indirectly), this incorporation has obviated the rejections over Beutel '743 alone, over Weiss '550 in view of Leblans '578 and further in view of Jamil '916, over Weiss '550 in view of Leblans '578 and further in view of Ochiai '971, and over Weiss '550 in view of Leblans '578 and further in view of Hultsch '454 as the Examiner did not cite claim 5 in any of these references.

Accordingly, Applicant herein points out differences between the cited art and the instant invention with a particular emphasis on the rejection with respect to Weiss '550 in view of Leblans '578.

Present Invention

The present invention, as recited in claim 1, relates to a method of manufacturing a radiation image conversion panel, comprising the steps of:

a) dispersing a calcined product of stimuable phosphor in a dispersion medium, to obtain a slurry;

- b) eliminating grains that are of at least a predetermined size from the slurry of step a), using wet classification wherein a final mesh in the wet classification is no more than 50 μm ;
- c) adding to the slurry of step b), a binder that is substantially soluble therein, to prepare a coating material; and
- d) applying the coating material to a support and drying to thereby form a phosphor layer.

Disclosure of Weiss '550

Weiss '550 discloses X-ray screens said to have reduced mottle that exhibit improved image quality and are prepared using europium-activated fluorohalide phosphors having an aminocoumarin brightening agent added thereto.

Weiss '550 fails to disclose a final mesh in the wet classification that is no more than 50 μm .

Disclosure of Leblans '578

Leblans '578 discloses a method for preparing metal halide phosphor particles (e.g. barium- and/or strontium-containing halide phosphor particles) of a selected particle size range. The method comprises the following steps: (1) firing the raw mixture materials of said phosphor to produce a sintered phosphor mass that is pulverized, (2) mixing said pulverized

phosphor mass, optionally after one or more firings, in a liquid mainly containing a water-miscible organic solvent with an organic acid dissolved therein, said acid being capable of forming with metal contained in the phosphor a salt the solubility of which in water at 20°C is less than 0.5 g per 100 ml, and (3) subjecting the treated phosphor particles in wet and/or in dry state to a separation treatment to collect phosphor particles having a grain size smaller than 40 μm but larger than 2 μm .

Leblans '578 fails to disclose a final mesh in the wet classification that is no more than 50 μm .

Removal of the Rejection over Weiss '550 in view of Leblans '578

Regarding Beutel '743 and Weiss '550 the Examiner states:

Even though the examples of Beutel and Weiss use coarser meshes than Applicant's example, there is no showing that the slurries of Beutel and Weiss would have been unclassifiable by finer meshes. Such an assertion would be contradicted by Alles '183, which indicates that slurry containing phosphor and binder may be classified to obtain particles of 3-6 microns. (Please see the Response to Arguments on page 6 of the final Office Action).

Applicant submits that the reason why Alles '183 can obtain particles of 3-6 micron size is because, in Alles '183, the dispersion is milled (e.g., by means of a colloid mill or ball mill) prior to the dispersion being passed through a fine mesh

screen filter cloth or felt (please see column 2, lines 16-18 in Alles '183).

The phosphor in Alles '183 is not a "stimulable" phosphor but is a conventional phosphor, whose properties are not changed by milling. The same is true of the phosphors present in Beutel '743 and Weiss '550.

In contrast, the phosphor of the instant invention is a "stimulable" phosphor, and if this "stimulable" phosphor were to be milled with a colloid mill or a ball mill, then the stimulability of the phosphor would be destroyed. Stimulability is provided by disposing activator atoms to specific sites of phosphor matrix crystal lattices during calcination. Thus, stimulability is destroyed by the physical stress caused by a mill, whether that be a colloid mill or a ball mill.

Accordingly, one cannot use the teaching of Alles '183 to arrive at the instant invention. If one were to use the method of milling taught in Alles '183 with the phosphor of Beutel '743 or Weiss '550, the stimulability of phosphor would be destroyed even though finer particles would be obtained. If the process of Alles '183 were not applied to the phosphor of Beutel '743 or Weiss '550, finer particles of phosphor would not be obtained because of higher viscosity. Accordingly, because the combination of Beutel '743, Weiss '550, and Alles '183 does not arrive at the instant invention, the instant invention cannot be

rendered obvious by any of Beutel '743, Weiss '550, and/or Alles '183.

Leblans '578 cannot make up for the deficiencies present in Weiss '550, Beutel '743, and/or Alles '183. Leblans '578 also uses a ball mill in the process of preparing phosphor particles. Please see column 11, lines 22-25. Accordingly, if one were to use the method of milling taught in Leblans '578 with the phosphor of Beutel '743 or Weiss '550, the stimulability of phosphor would be destroyed even though finer particles would be obtained. As mentioned above, if the process of Leblans '578 were not applied to the phosphor of Beutel '743 or Weiss '550, finer particles of phosphor would not be obtained because of higher viscosity. Accordingly, the instant invention cannot be rendered obvious by any of Beutel '743, Weiss '550, Alles '183 and/or Leblans '578. Withdrawal of the rejection is warranted and respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

If any questions remain regarding the above matters, please contact Applicant's representative, T. Benjamin Schroeder (Reg. No. 50,990), in the Washington metropolitan area at the phone number listed below.

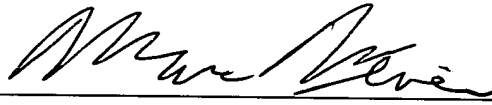
Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), Applicant respectfully petitions for a two (2) month extension of time for filing a response in connection with the present application. The required fee of \$420.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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By



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